

**Date:** June 15, 2011

**To:** Thomas J. Bonfield, City Manager  
**Through:** Theodore L. Voorhees, Deputy City Manager  
**From:** Edward R. Venable, Manager of Engineering and Stormwater  
**Subject:** **Contract Amendment No. 1** - Contract ST-250, 2011 Street Repairs and Repaving

### **Executive Summary**

Contract ST-250 was awarded by the City Council on February 21, 2011 to Barnhill Contracting Company, of Raleigh, North Carolina. This contract was one of four similar contracts consisting of pavement repairs, milling, utility adjustments, and repaving of City streets in various locations throughout approximately one quarter of the City of Durham funded by the 2010 Repaving Bonds. The original ST-250 contract amount was \$4,066,252.20.

The reconstruction of Revere Road was initiated under a separate contract ST-233 that was intended to completely reconstruct this road. Due to the unexpectedly poor subsurface conditions, additional work totaling \$1,350,000.00 needs to be added to complete the reconstruction of Revere Road. Accordingly, the Public Works Department recommends that the City Council authorize the City Manager to execute contract Amendment No. 1 with Barnhill Contracting Company, for Contract ST-250 in the amount of \$1,350,000.00. This results in a revised total amount of \$5,416,252.20.

### **Recommendation**

The Administration recommends that the City Council authorize the City Manager to execute contract Amendment No. 1 for ST-250, 2011 Street Repairs and Resurfacing, with Barnhill Contracting Company in the amount of \$1,350,000.00; increasing the total contract to \$5,416,252.20. This represents a 33.2 % increase over the \$4,066,252.20 previously authorized expenditure to facilitate continuation of the repaving construction.

### **Background**

Contract ST-250 was awarded by the City Council on February 21, 2011 to Barnhill Contracting Company, of Raleigh, North Carolina. This contract was one of four similar contracts consisting of pavement repairs, milling, utility adjustments, and repaving of City streets in various locations throughout approximately one quarter of the City of Durham funded by the 2010 Repaving Bonds. The original ST-250 contract amount was \$4,066,252.20.

The reconstruction of Revere Road was initiated under a separate contract ST-233 that was intended to completely reconstruct this road. The reconstruction of Revere Road is a much larger effort than a conventional re-paving project. The deterioration of the street was due to unsuitable soils that caused substantial and non-trivial roadway failures under both the

pavement and the curb and gutter. In order to return the street to a safe and stable condition, extensive sections of the pavement structure (including asphalt, stone base, curb and gutter) had to be removed and replaced in order to excavate the soil underneath that caused the structural failure of the road. Due to limitations on the size of contract amendments, it is proposed that ST-250 be amended rather than the original Revere Road contract, ST-233.

### **Issues/Analysis**

The attached map shows the extent of the project from NC 54 to the North and Sedwick Road to the South. As shown on the map, the project was setup into nine separate sections each of which required a full closure of the road to both local residents and thru traffic. All of the work required in Sections 1, 2A, 2B, 3, 4A, 4B and 4C are complete, as well as the small portion of Revere South of Sedwick; this is now being referred to as Phase I for illustrative purposes. The work in Sections 5 and 6 has not yet been started; this is now called Phase II and is the area in need of additional funding.

The map also shows the traffic control and detour routes used during construction. The length of the street thus far reconstructed and repaved in Phase I is about 5,560 feet; the length remaining in Sections 5 and 6 (Phase II) is about 2,650 feet.

The reconstruction work has turned out to be much more expensive than was originally estimated. The inadequate subsurface materials were more pervasive (longitudinally, laterally, and vertically) than the pre-project soil borings and engineering analysis had indicated. Where we planned on excavating about two feet of poor soils we had to remove five to six feet because of the wet conditions, and the structural inadequacy of the material.

In addition, the excavation uncovered tree stumps under the pavement and natural springs which popped out of the sidewall of the trenches. In response to these conditions not only was the cost of excavation beyond the original estimates, but also the structural stone and geo-synthetic materials required to build the new road bed exceeded the estimates. Additionally and where necessary, new storm water inlets and underground drains were added where appropriate to eliminate sources of soil instability. Several photographs are attached which illustrate some of these conditions.

The cost of the work on Revere Road to date is \$1.714M. This reflects all of the work in Sections 1, 2A, 2B, 3, 4A, 4B and 4C (Phase I) and completed in May 2011 using 2007 GO bonds as a part of Contract ST-233 with Barnhill Contracting Company. The earliest pre-construction estimate from last fall was \$1.3M for the entire project; comprehensive of Sections 1 thru 6. During January, February and March this year as the approach was refined, the final estimate for the project before construction was \$1.7M. This included accommodations and security for residents who could not access their homes with their vehicles at all while the road was completely closed for reconstruction.

Due to the unexpectedly poor subsurface conditions, additional work totaling \$1,350,000.00 needs to be added to complete the reconstruction of Revere Road. The work remaining in Sections 5 and 6 (Phase II) has been estimated to cost \$1.2M using all of the experience gained in Phase I. The contract amendment in the amount of \$1.350M includes \$150,000 contingency

Staff will be bringing an update to Council on the overall repaving program in August with some recommendations on how to use the remaining 2010 Repaving Bonds at that time.

The Public Works Department recommends that the Revere Road Phase II reconstruction be completed with a portion of these funds. The Administration may increase this existing construction contract, ST-250 up to 50%. This contractor has performed well while completing Phase I of this project under ST-233, and is also performing well under the City-wide repaving contract ST-250. Accordingly, the Public Works Department recommends amending Contract ST-250 with Barnhill Contracting Company by \$1,350,000.00, increasing the total contract to \$5,416,252.20.

### **Alternatives**

The Administration recommends the alternative to complete the repairs and resurfacing of Revere Road by amending Contract ST-250 with Barnhill Contracting Company by \$1,350,000.00, increasing the total contract to \$5,416,252.20.

City Council can choose to not approve the contract amendment. Staff will bid the work out and it is possible the cost would increase. The biggest drawback to this alternative is that construction would not begin until early Spring 2012. This is not recommended.

### **Financial Impact**

Funds are available in the 2010 Street Paving Bonds. The available balance in the paving bonds authority is approximately \$3.5 M. A total of \$900,000 is estimated to be used for personnel, equipment, and bond issuance fees, resulting in approximately \$2.6 M remaining to increase the repaving contract(s). City Council will receive an update on the total repaving program after the summer break with recommendations for use of the remaining bond funds.

### **SDBE Summary**

Barnhill Contracting Company, Inc. of Raleigh, North Carolina will subcontract to the following certified firms for work in this amendment:

| <b>Firm</b>                | <b>ID</b> | <b>City/State</b> | <b>Amount</b> | <b>% of Contract</b> |
|----------------------------|-----------|-------------------|---------------|----------------------|
| B. L. Dockery Trucking     | MSDBE     | Raleigh, NC       | \$ 2,500      | 0.21%                |
| Browe Construction Company | WBE       | Clayton, NC       | \$ 21,000     | 1.75%                |
| Certified Concrete Company | WSDBE     | Morrisville, NC   | \$ 74,000     | 6.16%                |